metatarsal slipper treatment group. A standardised treatment strategy supported by this review has been implemented in our institution.

### 0374: ERAS REDUCES UNPLANNED OVERNIGHT STAY FOLLOWING ORTHOPAEDIC DAY CASE SURGERY

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**Introduction**: The aim of ERAS is to improve patient outcomes and reduce postoperative length of stay (LOS) as well as having the benefit of better utilising hospital resources. Unplanned overnight stay following day surgery is a problem not only financially but also reduces available elective beds the following day.
**Method**: We undertook a retrospective review of all adult patients admitted for day case procedures, in one DGH, who unexpectedly stayed overnight (LOS>0). The 6 months pre and post implementation of the ERAS program were compared.
**Results**: Pre-ERAS data showed 110 of the 2963 (3.3%) day case patients stayed overnight. Post-ERAS 54 of the 2864 (1.9%) of day case patients stayed overnight. Reasons for unexpected overnight delay were categorised; patient, surgical, administrative and no reason. Fishers Exact test showed that there was a significant difference ($p<0.001$) in reduction of overnight stay in day case surgery following induction of ERAS.
**Conclusions**: It is well known that ERAS reduces LOS and improves outcomes. Simple interventions reduce unexpected overnight stay: preoperative physiotherapy, discharging with functioning regional blocks and TTH analgesia prescribed on admission. The programme has reduced unplanned overnight stay by over 50%, saved an estimated £28,000 and prevented cancellation of >40 elective procedures.

### 0394: CONTAMINATED ORTHOPAEDIC INSTRUMENT SETS: EFFECTS ON PATIENT CARE AND HOSPITAL COSTS

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**Introduction**: The aim was to assess the effects of contaminated orthopaedic sets on patient care and theatres in our District General Hospital. Orthopaedic sets are on occasion found to have holes in the sterile packaging, potentially due to larger and heavier sets.
**Methods**: Data was prospectively collected for all trauma and elective orthopaedic operations over three months. Collected data included operation, set type, number of minutes delay, whether the patient was anaesthetised and the outcome of the operation.
**Results**: A total of 788 operations during the three months found 37 contaminated sets affecting 34 operations (4.3%). Of these operations 23 (67.6%) had spare sets available, 5 (14.7%) a set had to be loaned, 2 (5.8%) had to use alternative sets, 1 (2.9%) operation was delayed whilst waiting for the set to be autoclaved and 3 operations (8.8%) were cancelled. The majority (64%) of operations affected were hip or knee replacements. 17 patients were anesthetised prior to finding a contaminated set however only 2 operations were delayed.
**Conclusions**: Contaminated orthopaedic sets affect patient care and hospital costs. This study potentially reveals a nationwide problem which needs addressing. Sterile metal cases may need to be considered as an alternative to sterile coverings.

### 0413: FACTORS AFFECTING BLOOD TRANSFUSION REQUIREMENTS IN PATIENTS UNDERGOING SURGICAL INTERVENTION FOR FRACTURES OF THE PROXIMAL FEMUR

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**Introduction**: Blood loss is a common complication of hip fractures, and often requires treatment with blood transfusion. The aim of this study was to determine risk factors for transfusion in surgically managed hip fractures.
**Methods**: A retrospective study of patients with hip fractures operated on over three months was conducted (n=191). Variables recorded included; demographics, fracture details, haemoglobin concentrations, operative details and transfusion information. The primary outcome measure was transfusion status; secondary outcome measures were intra-operative blood loss, and number of units transfused.
**Results**: Factors that significantly ($p<0.05$) increased the likelihood of blood transfusion were; increased age (mean=84.35years vs. 81.63years), lower pre-operative haemoglobin concentration (108.48g/L vs. 119.05g/L), and extra-capsular fractures (46.9% vs. 20.0%). A significantly ($p<0.05$) increased intra-operative blood loss was associated with longer surgeries (R=0.16) and treatment with IMHS rather than DHS or hemiarthroplasty (mean=30g/L vs. 16.9g/L vs. 19.7g/L). When treated, those managed with IMHS required significantly ($p<0.05$) larger transfusions (mean=1.27units vs. 0.92units vs. 0.42units).
**Conclusions**: Patients who are likely to require a transfusion, or are at risk of increased intra-operative blood loss should be cross-matched early in order to minimize delay to treatment.

### 0420: TRANSFUSION REQUIREMENTS IN HIP FRACTURE PATIENTS: DOES THE TYPE OF FRACTURE MATTER?

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**Introduction**: Hip fractures in the elderly represent a major source of morbidity and mortality with allogeneic blood transfusions associated with increased mortality. This study assesses the blood transfusion requirements between the most common patterns of hip fracture i.e. intertrochanteric (IT) and intracapsular (IC).
**Methods**: A retrospective study of all of our patients entered on the National Hip Fracture Database over a 1-year period in a teaching hospital was performed. 561 patients were reviewed and following exclusion criteria, 475 were evaluated (198 IT, 277 IC). Baseline haematological parameters and blood transfusions were identified through the hospital systems. Analysis was performed in SPSS using both independent samples t-tests and chi-square tests.
**Results**: Patient groups were comparable for gender, anaesthetic type, ASA grade and mean values for cognitive score and coagulation parameters. A greater proportion of IT patients required a blood transfusion during their stay (39.4% vs 22.4%, $p<0.001$), although the average number of units transfused per patient were equivalent (2.69 vs 2.44 units, $p=0.293$).
**Conclusions**: Patients with IT hip fractures are significantly more likely to require a blood transfusion than those with IC hip fractures

### 0421: LIMB LENGTH AND OFFSET AFTER TOTAL HIP ARTHROPLASTY: INCREASED ACCURACY WITH THE USE OF A CALIPER

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**Introduction:** In the context of total hip arthroplasty (THA), we aimed to assess the utility of an intraoperative 'limb-length and offset caliper' (LLOC) in reducing the frequency of unacceptable ($\geq$10mm) post-operative limb-length discrepancy (LLD) and offset discrepancy (OD).
**Methods:** The suitability of 123 post-THA radiographs was assessed. 82 met criteria for analysis and were assigned to a 'caliper-used' (CU; n=57) or 'no-caliper-used' (NCU; n=25) group. Analysis was undertaken with TraumaCAD® software. Radiographically normal unoperated hips were used as a control. The frequency of unacceptable ($\geq$10mm) LLD and OD were compared between groups.
**Results:** Length: In the NCU group, 24% (n=6) of hips demonstrated LLD $\geq$10mm, compared with 7% (n=4) in the CU group ($p=0.04$). Offset: In the NCU group, 20% (n=5) of hips demonstrated OD $\geq$10mm, compared with 5% (n=3) in the CU group ($p=0.052$).
**Conclusions:** This study demonstrates a significant reduction in the frequency of unacceptable LLD (previously associated with adverse sequelae) when using the LLOC. A reduction in the frequency of unacceptable OD with LLOC use was also seen. Therefore, as a simple adjunct that is associated with minimal additional time and effort from the surgeon, we would advocate the routine use of the LLOC in THA.

### 0443: EDUCATION GREATLY IMPROVES AMT SCORING IN PATIENTS WITH FRACTURED NECK OF FEMUR

Peter Davies *, Duncan Hughes, Thomas Heseltine, Stephen Allsup, Ravindra Gudena. *St Helens and Knowsley NHS Trust, Merseyside, UK.*

**Introduction**: The best practice tariff (BPT) for fragility hip fracture applies to patients aged 60 years and over admitted with a fractured neck of femur (NOF). It awards £1335 per case provided several criteria are met including completion of pre and post-operative abbreviated mental test (AMT). Our fractured NOF pathway prompted AMT scoring, but was often ignored. This audit aimed to improve BPT compliance and patient care.

**Methods**: A retrospective case-note review was undertaken demonstrating poor compliance. Education about AMT is now included in the induction for new junior doctors and this was discussed at several departmental meetings to increase awareness. A series of retrospective re-audits were undertaken to assess for improvement.
**Results**: In 92 patients admitted with fractured NOF between September-November 2011, 21% of admissions were AMT compliant (37% completed pre-operatively, 65% post-operatively). Re-audit of 131 cases from August-November 2012 showed 53% compliance (86% pre-operatively, 62% post-operatively). Further re-audit of 82 patients from April-June 2013 revealed 88% compliance (100% pre-operatively, 88% post-operatively).
**Conclusions**: Educating doctors and the wider multidisciplinary team greatly improved AMT scoring. This improved care by quickly identifying delirium and dementia to expedite investigation. Similar education should be arranged in trusts underachieving AMT documentation.

### 0458: USAGE OF THYROID SHIELDS DURING ORTHOPAEDIC PROCEDURES INVOLVING FLUOROSCOPY – ARE WE PROTECTING OURSELVES?

Justinas Silickas [*], Angus Fong, David Shaw. *Bradford Royal Infirmary, Bradford, UK.*

**Introduction**: To assess adherence to the Trust's 'Ionising Radiation Regulations Local rules for the use of diagnostic x-rays' stating that a thyroid shield should be used by all staff in the controlled area.
**Methods:** A covert prospective observational study of 30 acute and elective orthopaedic theatre lists using fluoroscopy. Total number of personnel in theatre, their job role, usage of thyroid shield and whether they were within the 2 metres operational controlled area was recorded.
**Results:** In total 243 people were observed. Only 20% of staff in theatre was using a thyroid guard. Among these 89% of radiographers, 18% of surgeons, 8% of nurses and 2% of anaesthetists wore a thyroid shield. Within the controlled 2 metre radius 35% wore a thyroid shield. We also found that there was inadequate number of thyroid shields provided although this did not contribute to the lack of their usage.
**Conclusions:** Radiation exposure is a concern in orthopaedic theatres. There is a poor adherence to the Trust protocol. Therefore, staff should be educated about radiation risks and encouraged to wear personal protective equipment. The hospital trust should also provide adequate supply of thyroid shields in theatres.

### 0465: DO CENTRAL NEUROAXIAL BLOCKS INCREASE THE RISK OF URINARY RETENTION IN POST-OPERATIVE ARTHROPLASTY PATIENTS?

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**Introduction**: Central neuro-axial blocks (NAB) (spinal or epidural anaesthesia) are commonly used alongside general anaesthesia (GA) in hip (THR) and knee arthroplasty (TKR) for post-operative pain relief. These blocks can cause urinary retention post-operatively. In addition to being unpleasant, urethral instrumentation in urinary retention can cause traumatic urethral injury and introduce bacteria into the blood stream, potentially increasing the risk of infection. This study assesses the correlation between NAB and post-operative urinary retention.
**Methods**: All male patients undergoing THR or TKR over 4 weeks period were prospectively audited. Data was collected on age, operation, anaesthesia type and post-op catheterisation. Chi-squared test was used to assess the statistical significance.
**Results**: 30 male patients were recruited. Mean age 67 (52-79). 20 patients had GA+NAB, and 10 had GA.13 (43.3%) had post-operative urinary retention, of whom 11 (84.6%) had GA+NAB, and 2 (15.4%) had only GA. 55% of patients who had GA+NAB needed post-operative catheterisation, compared to 20% of those who only had GA. The relative risk of developing urinary retention in patients who had NAB was 2.75 and the odds ratio was 4.89 ($p=0.06$).
**Conclusions**: Central neuro-axial blocks significantly increased the risk of needing post-operative catheterisation. We suggest electively catheterizing arthroplasty patients planned for neuro-axial block.

### 0484: IMPROVING THE PRE-OPERATIVE MANAGEMENT OF WARFARINISED PATIENTS UNDERGOING EMERGENCY NECK OF FEMUR FRACTURE REPAIR

Sheeraz Ahmed [*], Kate Spacey, Abdel Reda, Alan White. *Southend University Hoispital NHS Foundation Trust, Essex, UK.*

**Introduction**: To develop a protocol that optimises the International Normalised Ratio (INR) reversal time of warfarinised patients undergoing emergency neck of femur (NOF) fracture repair.
**Methods**: A protocol based on venous thrombo-embolism risk stratification was developed and authorised for use within a UK hospital. INR reversal time and door to theatre time was obtained retrospectively for a period before (Jan - Mar '12; n=6) and after (Jan - Mar '13; n=9) implementation. Exclusion criteria: patients without a documented INR of less than 1.5 prior to surgery.
**Results**: Implementation of the protocol decreased the average INR reversal time from 36.6 to 20.5 hours, a 56% reduction. A greater proportion of patients underwent surgery within the national target time of 36 hours after implementation when compared to before (56% and 33% respectively). Out of the patients that breeched the target time, 100% of those before implementation did not have an INR within range within 36 hours, compared to only 25% after.
**Conclusions**: Having a protocol for junior doctors reduces the INR reversal time for warfarinised patients undergoing NOF fracture repair thus increasing the proportion that meet the national target time for surgery.

### 0500: IS LEFT LEG RADICULOPATHY MORE PREVALENT AND DISABLING THAN RIGHT LEG RADICULOPATHY FOR LUMBAR DISC HERNIATION?

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**Introduction**: To evaluate patients presenting with lumbar disc herniation in order to establish if radicular pain preferentially lateralises to one side.
**Methods**: Retrospective review of 150 patients. All patients were treated with microdiscectomy between January 2007 and December 2012. Pre-operative and post-operative Oswestry Disability Index (ODI) scores were recorded at follow-up. ODI scores were compared for left-sided and right-sided radiculopathy.
**Results**: 150 patients presented during the 5 year period (n=150), 130 (86.7%) had symptoms of radiculopathy. 40 (26.7%) had pain in the right-sided radiculopathy whereas 83(55.3%) experienced left-sided radiculopathy. Bilateral pain was present in 10 (6.7%). The mean of the pre-operative ODI scores was compared; left-sided radiculopathy = 57.3, right-sided radiculopathy = 58.0, ($p=0.24196$). Post-operatively; left-sided radiculopathy = 27.7, right-sided radiculopathy = 31.4 ($p=0.22065$).
**Conclusions**: This study demonstrates lateralisation of pain to the left-side is more frequent in patients with lumbar disc herniation. Based on the ODI scores, our results demonstrate there is no significant difference in the functional status between these two groups of patients. We believe most patients are right leg dominant, so during various tasks the left leg is used as an axis. This can increase load on left-side causing disc protrusion resulting in left-sided radiculopathy.

### 0548: THE EFFECTS OF WEATHER ON FRACTURE ADMISSIONS

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**Introduction**: The fracture incidence in England is about 3.6 fractures per 100 people per year. The incidence of fractures is often attributed to the weather. The purpose of the study was to identify the effects of weather on trauma admissions.
**Methods**: We identified the weekly number of all patients presenting to accident and emergency with a diagnosis of a fracture between 06/11/2008 to 25/10/2011 retrospectively. Information on the weekly average temperature, precipitation and wind speed was then recorded from the local weather station, then weekly presentation and weather were compared. Analysis was by Pearson's correlation.
**Results**: There were a total of 9500 patients identified during the study period. Total fracture number appeared to be significantly increased with low precipitation ($p=0.004$). Ankle fractures were more frequent with temperatures below $5^0$C ($p=0.004$), with less precipitation ($p<0.001$) and with wind speeds below 40km/h ($p=0.06$). Wrist fractures demonstrated a lower incidence with a lower precipitation ($p=0.002$) and when wind speeds were above 40km/h ($p=0.004$). Hip fractures showed a tendency for increased incidence when wind speeds were below 40km/h ($p=0.07$).
**Conclusions**: Total fracture admission does appear to be affected, in part, by the weather. This data will facilitate planning hospital emergency services throughout the year.